

CLAIMS

What is claimed as being new and desired to be protected by LETTERS PATENT of the United States is as follows:

1. A drop away arrow rest system for assuring total bow shelf clearance during drawing a bow or during let down and for assuring drop away of the arrow rest only when the bow is fired, and assuring that the arrow rest fully captures the arrow when loaded until fired, the system comprising, in combination:

a compound bow with a string and with an arrow adapted to be shot in a path of travel from the bow by the pulling and releasing of the string;

a housing having a hollow interior with coupling components for releasably coupling the housing to the bow;

a shaft with an interior segment rotatably supported within the housing, the shaft having an exterior segment extending exterior of the housing beneath the arrow and transverse to its path of travel;

a generally Y-shaped launcher having a downwardly extending arm and two laterally spaced upwardly extending arms, the arms extending essentially vertically with the arrow there between when firing the arrow, the launcher providing a V-shaped surface for supporting the arrow during the drawing of the bow and the release of the string, the downwardly extending arm having an aperture receiving the exterior segment of the shaft for the

rotation of the launcher concurrent with the rotation of the shaft;

an oscillator within the housing rotatably mounted on the shaft with an arcuate recess of about 90 degrees, the recess having arcuate ends, a rubber bumper stop within the housing between the ends of the recess fixedly supported by the housing adjacent to the launcher to limit the rotation of the oscillator, one end of the oscillator having a protruding finger to function as a deceleration node which latches on a stop pin to prevent bounce back of the launcher when the launcher drops at full velocity, a coil spring with a first end fixedly coupled to the end cap remote from the launcher and a second end coupled to the oscillator to rotate and drop the launcher when firing an arrow, a dog mounted on a pivot pin secured to the oscillator, the dog having a head functioning as a spring with a fixed intermediate locking pin co-operable with the head to hold the oscillator and launcher in the intermediate orientation, the dog having a tail functioning with a fixed ramp pin co-operable with the tail, to rotate counterclockwise and hold the dog when the oscillator and launcher are rotated to the vertical or firing orientation;

a thumbwheel mounted on the end of the shaft remote from the launcher for rotation there with, the thumbwheel having a radially enlarged segment for rotation by the user to rotate the shaft and launcher to the intermediate orientation between the

essentially horizontal orientation and the essentially vertical orientation;

a cord having a first end secured to the thumbwheel and a second end with a bracket coupled between the string and the cord whereby pulling the string will pull the cord and rotate the thumbwheel and shaft and launcher to an essentially vertical orientation from an intermediate orientation and whereby release of the string will rotate the shaft and launcher from the essentially vertical orientation to the horizontal orientation;

a horizontal bar having a fixed end secured to the vertical component and having an intermediate region positioned over and in proximity to the upper arms of the launcher to preclude an arrow on the launcher from falling away; and

a horizontal clamping screw and a vertical clamping screw operatively coupled between the housing and the launcher to accommodate fine tuning of the rest for optimum arrow flight.

2. A drop away arrow rest system comprising:

a housing having a hollow interior with coupling components for releasably coupling the housing to a bow;

a shaft with an interior segment rotatably supported within the housing and an exterior segment;

a generally Y-shaped launcher having a downwardly extending arm and two laterally spaced upwardly extending arms, the

downwardly extending arm having an aperture receiving the exterior segment of the shaft for the rotation of the launcher;

a thumbwheel mounted on the interior component of the shaft for rotation there with for rotation by the user to rotate the shaft and launcher to an intermediate orientation; and

a cord having a first end secured to the thumbwheel for rotating the thumbwheel and a second end coupled to the string whereby pulling the string will rotate the shaft and launcher to an essentially vertical orientation.

3. The system as set forth in claim 2 and further including an oscillator within the housing rotatably mounted on the shaft with an arcuate recess of about 90 degrees, the recess having arcuate ends, a rubber bumper stop within the housing between the ends of the recess fixedly supported by the housing adjacent to the launcher to limit the rotation of the oscillator, one end of the oscillator having a protruding finger to function as a deceleration node as the launcher drops away and reaches the horizontal position, a coil spring with a first end fixedly coupled to the end cap remote from the launcher and a second end coupled to the oscillator to rotate and drop the launcher when firing an arrow, a dog mounted on a pivot pin secured to the oscillator, the dog having a head functioning as a spring with a fixed intermediate locking pin co-operable with the head to hold the oscillator and launcher in the intermediate orientation, the

dog having a tail functioning with a fixed ramp pin co-operable with the tail, to rotate counterclockwise and hold the dog when the oscillator and launcher are rotated to the vertical or firing orientation.

4. The system as set forth in claim 2 and further including a horizontal bar having a fixed end secured to a vertical component of the housing and having an intermediate region positioned over and in proximity to the upper arms of the launcher to preclude an arrow on the launcher from falling away.

5. The system as set forth in claim 2 and further including a horizontal clamping screw and a vertical clamping screw operatively coupled between the housing and the launcher to accommodate fine tuning of the rest for optimum arrow flight.

6. The system as set forth in claim 2 wherein the launcher rotates with a shaft and rotates to full vertical position, vertical of its pivot point.

7. The system as set forth in claim 2 wherein the drop away rest and launcher is activated via the movement of the bow during the draw cycle and only drops away when the bow is fired.

8. The system as set forth in claim 2 wherein the drop away launcher and associated components totally captures the arrow from the time the arrow is loaded until it is either fired or manually removed.

9. The system as set forth in claim 2 and further including an anti-bounce-back feature after firing.

10. The system as set forth in claim 2 and further including a dog fabricated of spring steel and of a configuration which has a break away feature whereby if an arrow is shot through the launcher and the timing is incorrect by improper installation, then the dog will spring and allow the launcher to drop away without damage.

11. The system as set forth in claim 2 and further including velocity dropaway technology wherein the launcher only drops away when the bow is fired at which time the rest is allowed to drop away at a full spring tension, a rapid velocity without sufficient hindrance by the cord to allow the dog to catch on a locking pin.